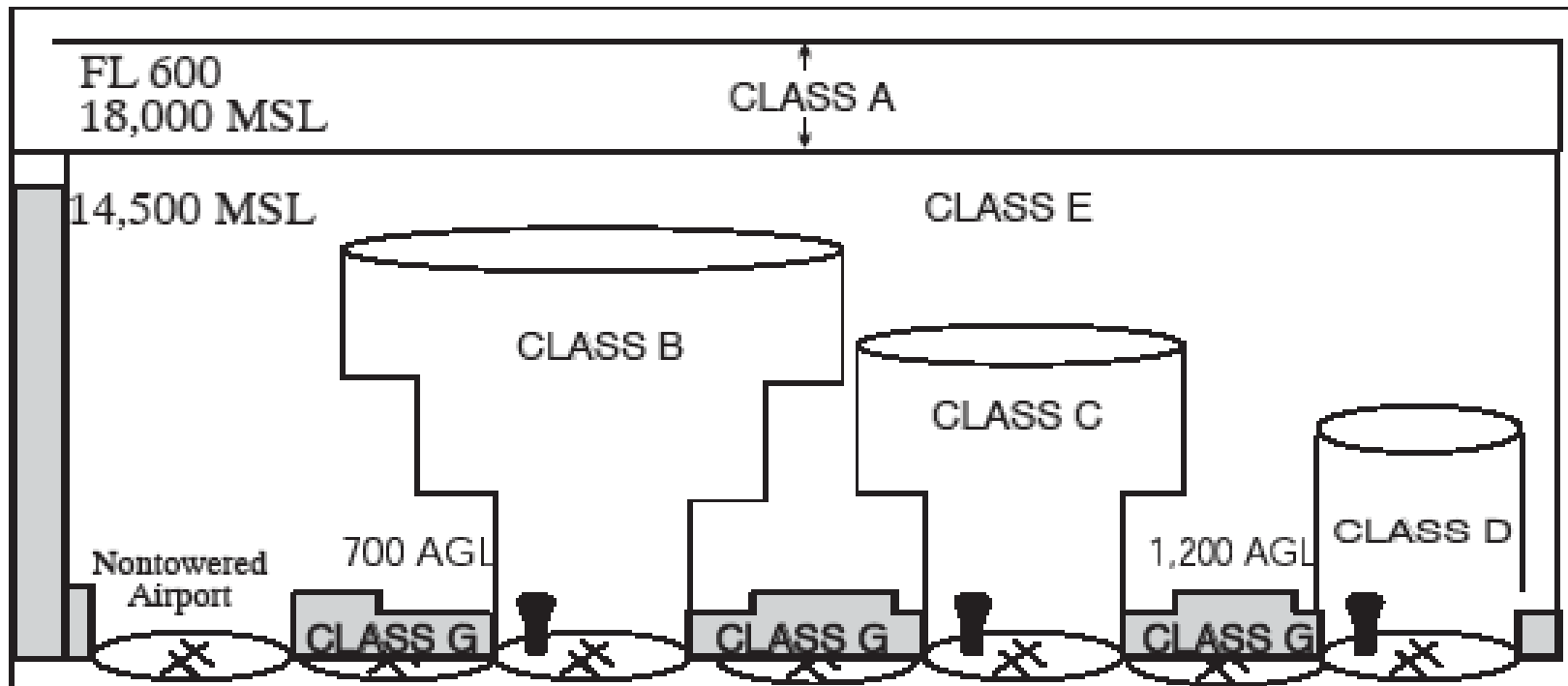


Federal Airspace Classifications

LCDR Hutchinson

17 February 2006

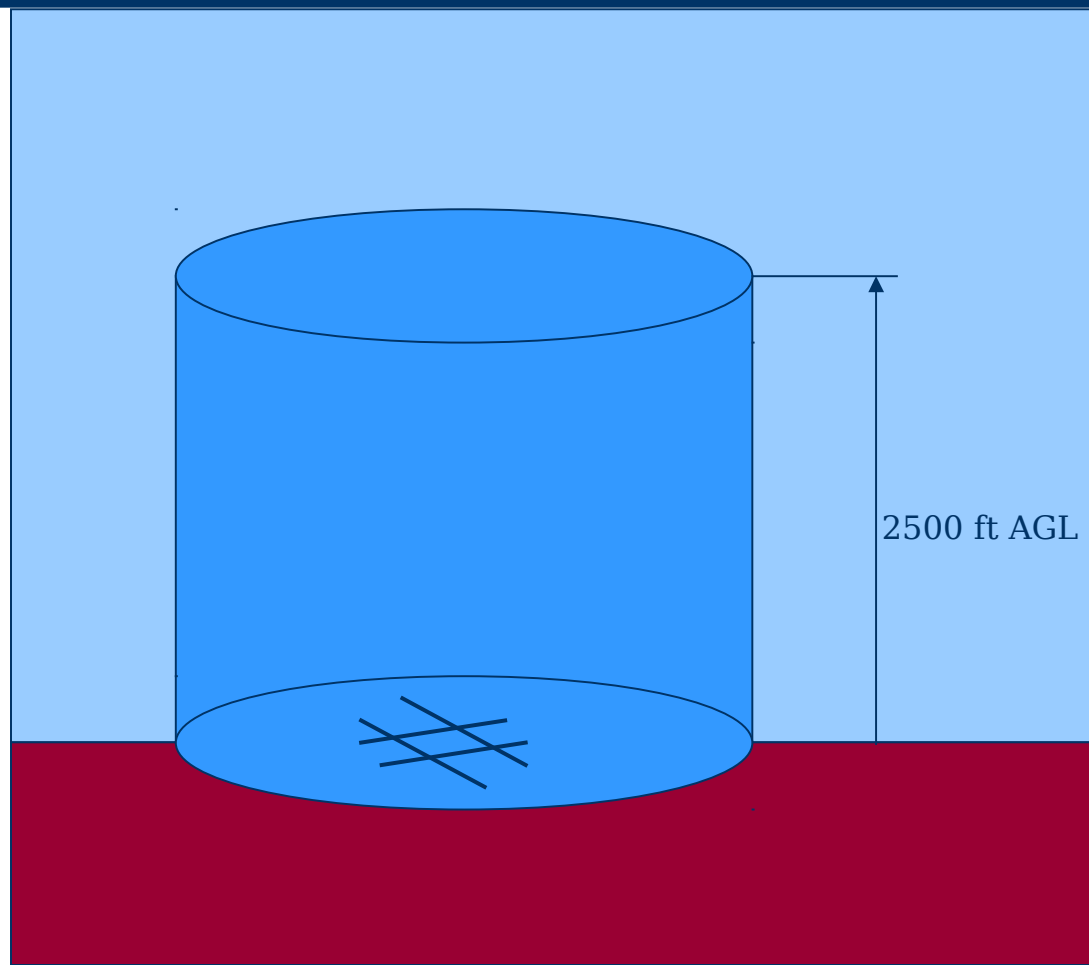
Airspace Diagram



Airspace Overview

- Types
 - Alpha, Bravo, Charlie, Delta, Echo, and Golf.
 - Prohibited, Restricted, MOA, Alert, and Warning areas.
 - Land based ADIZ, Controlled Firing Area, TRSA, National Security Areas, and Wildlife refuges.
- Requirements for Designation.
- Requirements for Operating within each.
- Chart Depictions

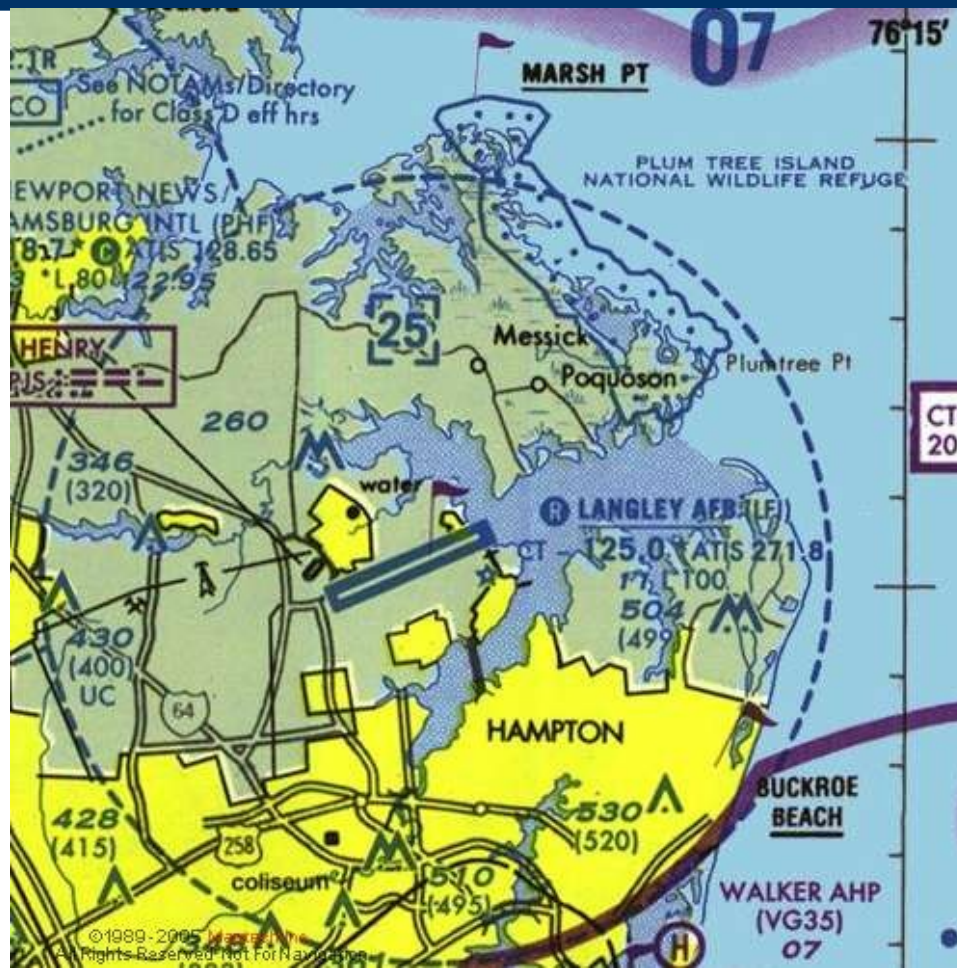
Class “D” Airspace



Class “D” Airspace

- What is required to designate an airport with Class “D” airspace?
 - *“Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an **operational control tower**.”* – AIM 3-2-5
- What are the normal dimensions?
 - *“The configuration of each Class D airspace area is individually tailored...”* - AIM 3-2-5
- What airspace is effective when the Tower closes?
 - Is the airport closed?
- What is required to operate in Delta Airspace?
 - *“Two-way radio communication must be established with the ATC facility... prior to entry and thereafter maintain those communications while in Class D airspace.”* - AIM 3-2-5
 - *“...if the controller responds to the initial radio call without using the aircraft identification, radio communications have not been established ...”*

Class “D” Depiction

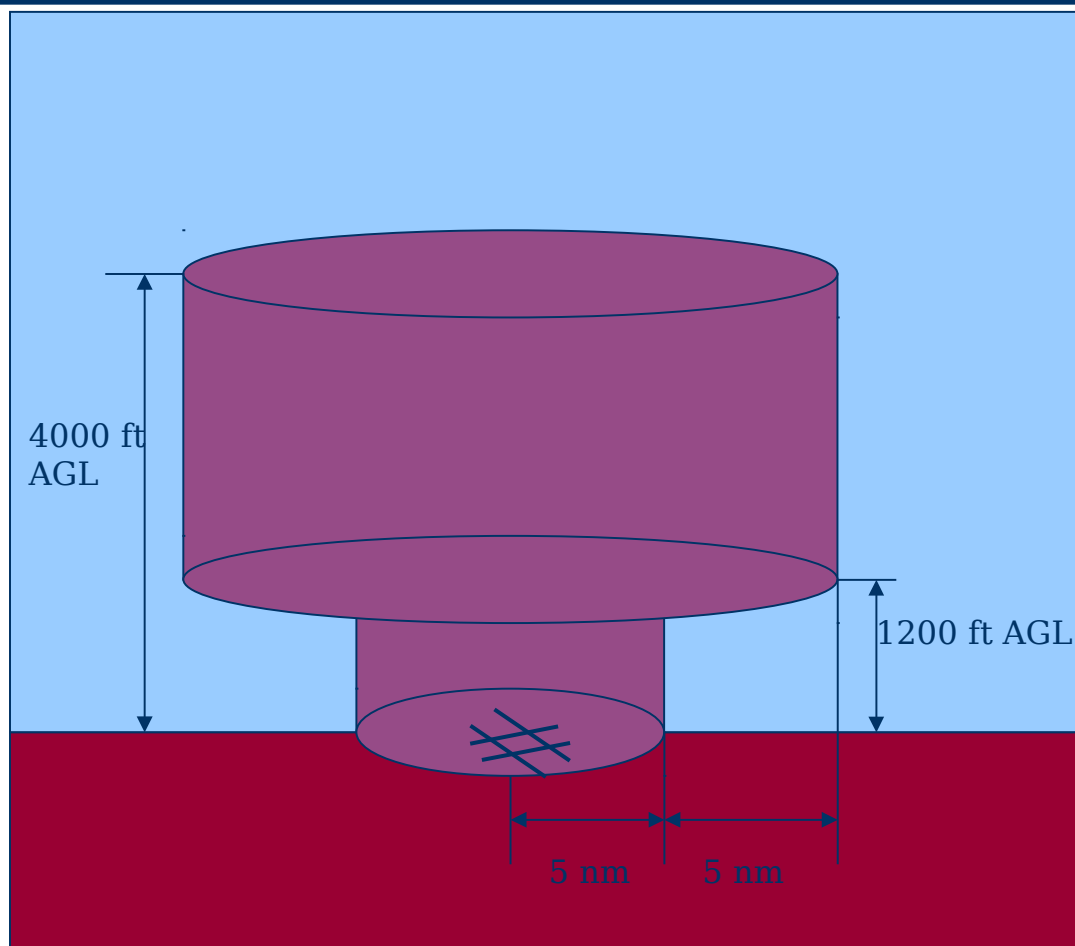


Class “D” Bonus Question

- What is the significance of the [-20] symbol over Chambers Field????
 - *“A minus ceiling value indicates surface up to but not including that value.”*



Class “C” Airspace



Class “C” Airspace

- What is required to designate an airport with Class “C” airspace?
 - *“Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an **operational control tower**, are **served by a radar approach control**, and that have a certain number of IFR operations or passenger enplanements.”* - AIM 3-2-4
- What are the normal dimensions??
 - *“...Each Class C airspace area is individually tailored, the airspace usually consists of a 5 NM radius core surface area... and a 10 NM radius shelf area that extends from 1200 to 4000 feet above the airport elevation...”* – AIM 3-2-4
- What airspace is effective when the Tower closes?
 - Is the airport closed?

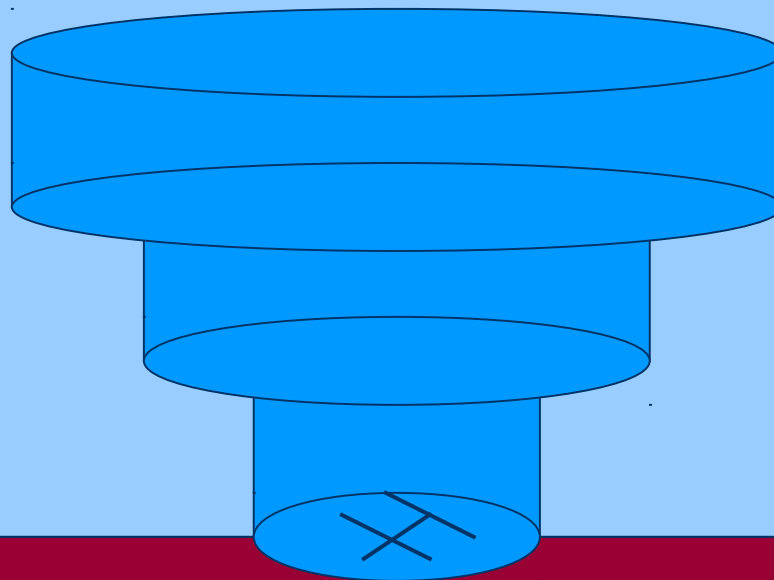
Class “C” Requirements

- What is required to operate in Class “C” Airspace?
 - *“Two-way radio communication must be established with the ATC facility... prior to entry and thereafter maintain those communications while in Class C airspace.” - AIM 3-2-4*
 - *“...if the controller responds to the initial radio call without using the aircraft identification, radio communications have not been established ...”*
- What is required to fly under it?
 - *“G” airspace, no additional voice or transponder requirements.*

Class “C” Bonus Question

- What is required to fly over it?
 - *“In general, [aircraft are required] to be equipped with Mode C transponders when operating...within and above all Class C airspace, up to 10,000 feet MSL.”* – AIM 4-1-19 (F) or FAR 91.215 (b)(1) and (b)(5)(i)
 - *“Unless otherwise authorized...no person may operate an aircraft unless [it] is equipped with an operable coded radar beacon... in all airspace of the 48 contiguous states and the District of Columbia at and above 10,000 feet MSL...”* - FAR 91.215 (b)(5)(i)

Class “B” Airspace



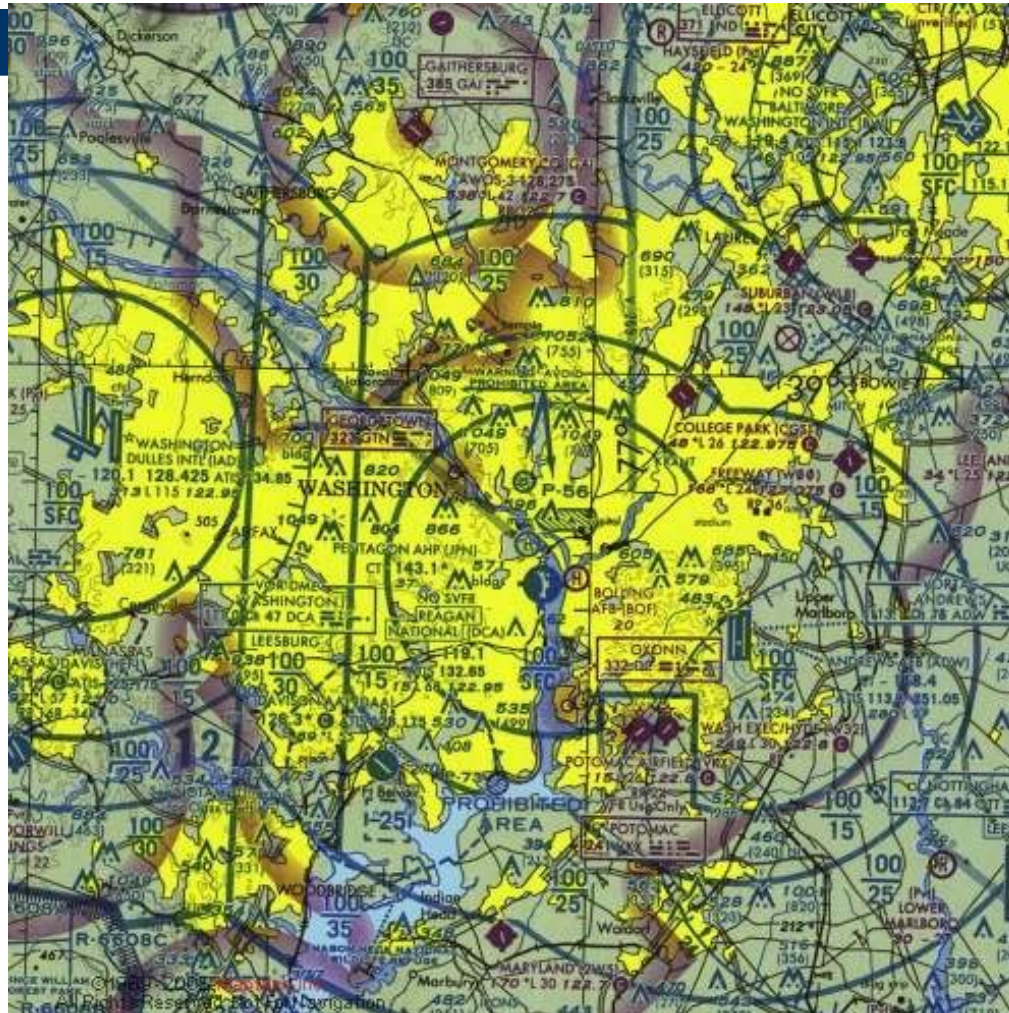
Class “B” Airspace

- What is required to designate an airport with Class “B” airspace?
 - *“Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation’s busiest airports in terms of IFR operations or passenger enplanements.” - AIM 3-2-3*
- What is the normal size?
 - *“The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers, and is designed to contain all published instrument procedures once an aircraft enters the airspace.” - AIM 3-2-3*

Class “B” Airspace

- What are the requirements to enter “B” airspace? (FAR 91.131)
 - Two-way radio communications.
 - ATC Clearance.
 - Private Pilot certificate (student pilot caveat except for 12 airfields).
 - Operable Transponder with altitude reporting capability.
 - *“ATC may immediately authorize a deviation from the altitude reporting equipment requirement; however, a request for a deviation from the 4096 transponder equipment requirement must be submitted to the controlling ATC facility at least one hour before the proposed operation.”*
- AIM 4-1-19
 - Appropriate navigation aid for IFR operations.
- What is the Mode C Veil?
 - *“The airspace within 30 nautical miles of an airport [with B airspace], from the surface upward to 10,000 feet MSL.”*
 - *“Unless otherwise authorized by ATC, aircraft operating within this airspace must be equipped with automatic pressure altitude reporting equipment having Mode C capability.”*

Class “B” Depiction



VFR Corridors

- Definition
 - *“Airspace through Class B airspace, with defined vertical and lateral boundaries, in which aircraft may operate without an ATC clearance or communication with air traffic control.” – AIM 3-5-7*
 - “E” airspace.
 - Transit “B” airspace directly over primary airfield.
 - Typically, no ATC reporting requirements.
-
- *“Because of the heavy traffic volume and the procedures necessary to efficiently manage the flow of traffic, it has not been possible to incorporate VFR corridors in the development or modifications of Class B airspace in recent years.”*

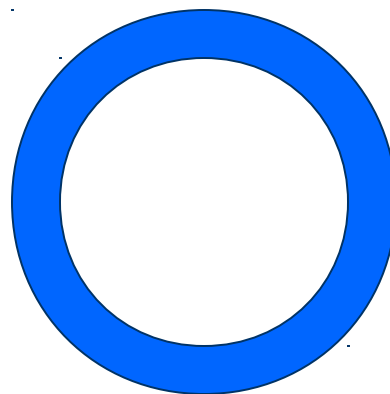
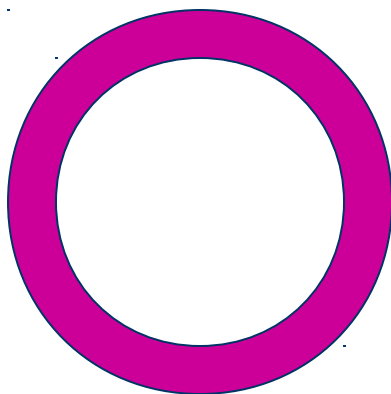
VFR Corridor Depiction



Class “G” Airspace

- Definition:
 - *“Class G airspace (uncontrolled) is that portion of the airspace that has not been designated as Class A, Class B, Class C, Class D, or Class E airspace.”*
 - Exists from the Surface to 1200 feet AGL unless designated otherwise.
 - Clear of Clouds and 1 SM visibility
 - *“A helicopter may be operated clear of clouds if operated at a speed that allows the pilot adequate opportunity to see any air traffic or obstruction in time to avoid a collision.” FAR 91.155(b)*
 - *“For the purpose of this section, an aircraft operating at the base altitude of a Class E Airspace area is considered to be within the airspace directly below that area.” FAR 91.155 (e)*

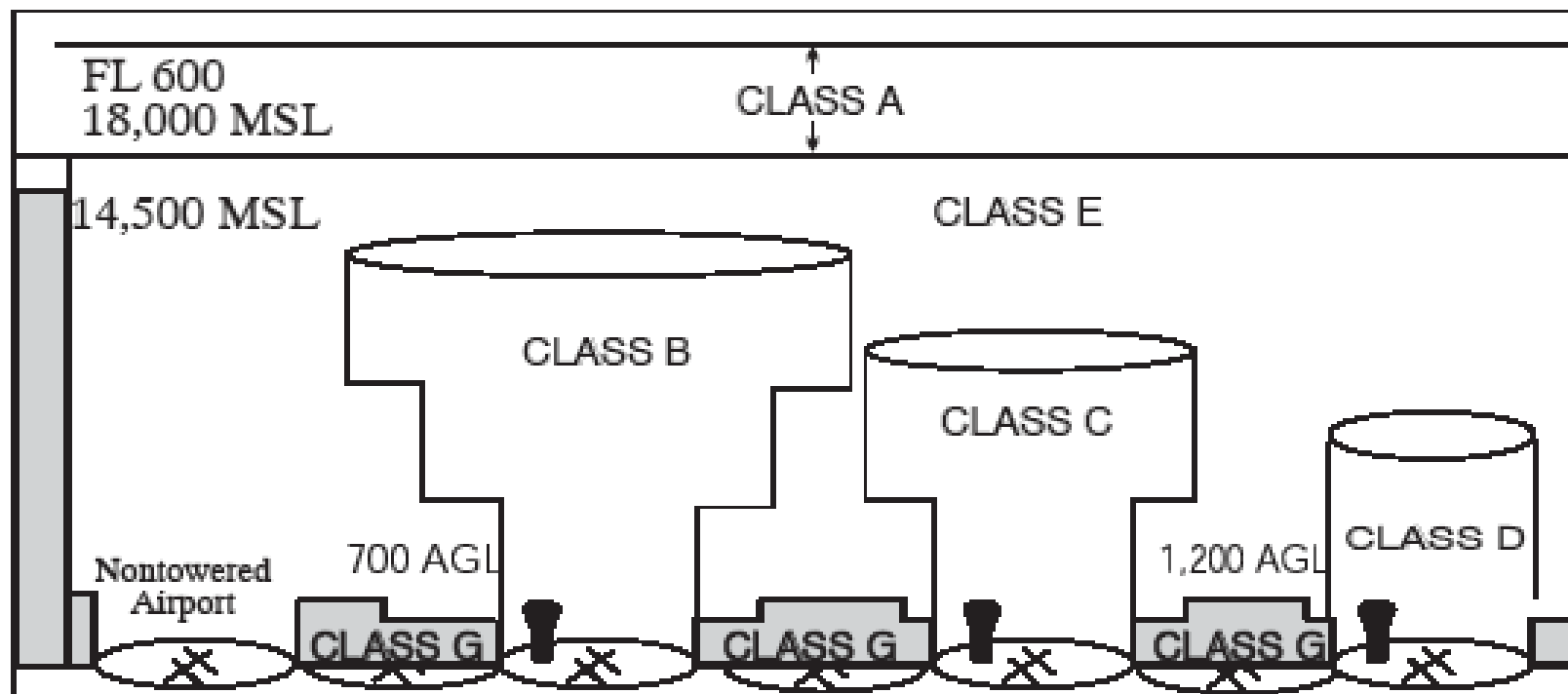
Class “E” Airspace



Class “E” Airspace

- All other airspace went UP.
- Think of Echo as moving DOWNWARD.
- From the AIM:
 - *“Except for 18,000 MSL, Class E airspace has no defined vertical limit but rather it extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace.”*
 - *“Unless designated at a lower altitude, Class E airspace begins at 14,500 feet MSL to, but not including, 18,000 feet MSL overlying the 48 contiguous States including the waters within 12 miles from the coast of the 48 contiguous States.”*
- Or, more simply put:
 - *“Class E airspace exists from 18,000 feet MSL down to 14,500 feet MSL, unless depicted lower, not to include that airspace below 1200 feet AGL.”*

Class “E” Airspace



Class “E” Airspace

- How is Class “E” Airspace depicted?
 - Magenta dashed lines
 - Magenta shaded lines
 - Blue shaded lines
 - Blue “zipper” lines
- There is ONLY one type of “E” Airspace!!!
 - Surface area
 - Surface area extension
 - Transition areas
 - En Route Domestic areas
 - Federal Airways
 - Offshore Airspace Areas
 - Otherwise Designated...

Class “E” Depicted



Class “E” Depicted



Class “E” Airspace

- What are the requirements to operate in Class “E” Airspace?
 - “No specific certification required.”
 - “No specific equipment required by the airspace.”
 - “No specific requirements [for entry or through-flight].”
- So why go to the trouble of designating it?

Cloud Clearance Requirements

Airspace	Flight Visibility	Distance from Clouds
Class A	Not Applicable	Not Applicable
Class B	3 statute miles	Clear of Clouds
Class C	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class D	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class E Less than 10,000 feet MSL	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
At or above 10,000 feet MSL	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal
Class G 1,200 feet or less above the surface (regardless of MSL altitude).		
Day, except as provided in section 91.155(b)	1 statute mile	Clear of clouds
Night, except as provided in section 91.155(b)	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
More than 1,200 feet above the surface but less than 10,000 feet MSL.		
Day	1 statute mile	500 feet below 1,000 feet above 2,000 feet horizontal
Night	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
More than 1,200 feet above the surface and at or above 10,000 feet MSL.	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal

Normal-Use Airspace Summary

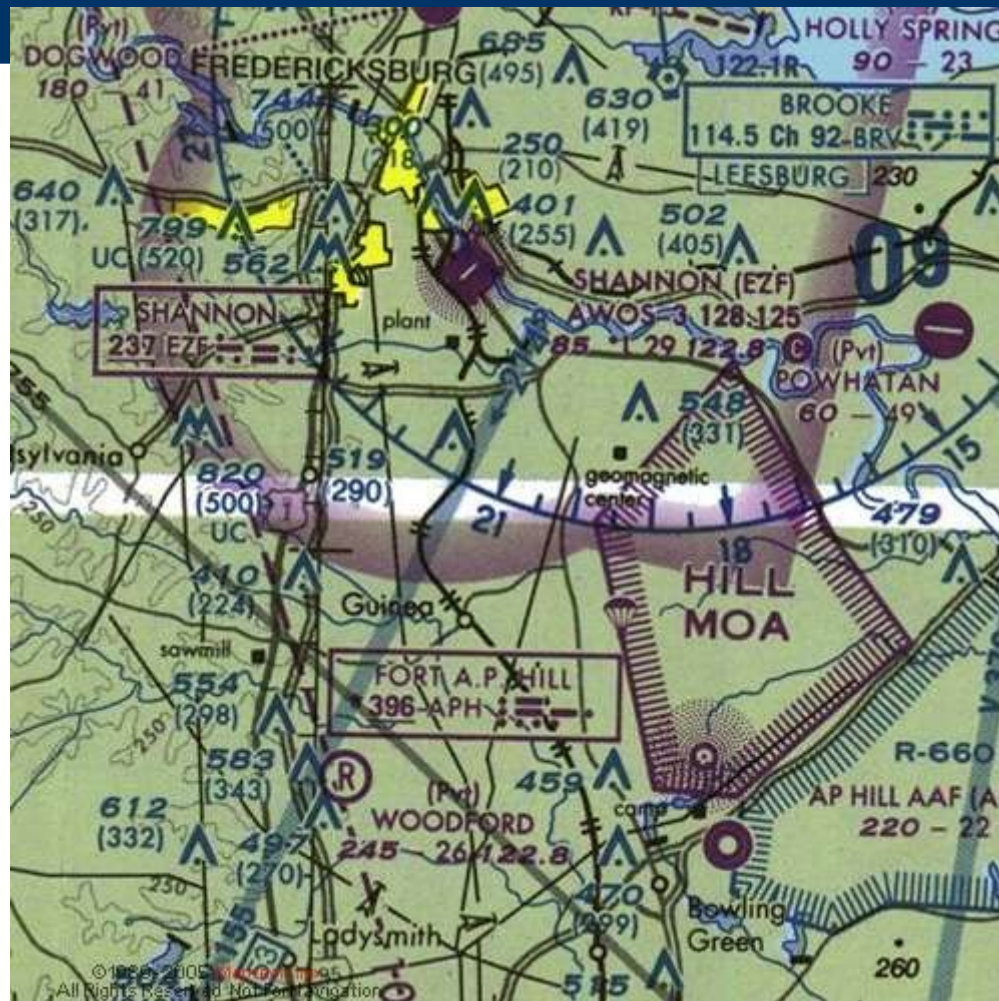
- Class B, Class C, Class D, and Class G all go UP. *“From the Surface To.”*
- Class E goes DOWN. *“From 18,000 feet MSL down to 14,500 ft MSL, unless depicted lower...”*
- Each airspace is Individually Tailored.
- Don’t forget about Cloud Clearance Requirements!



Special Use Airspace

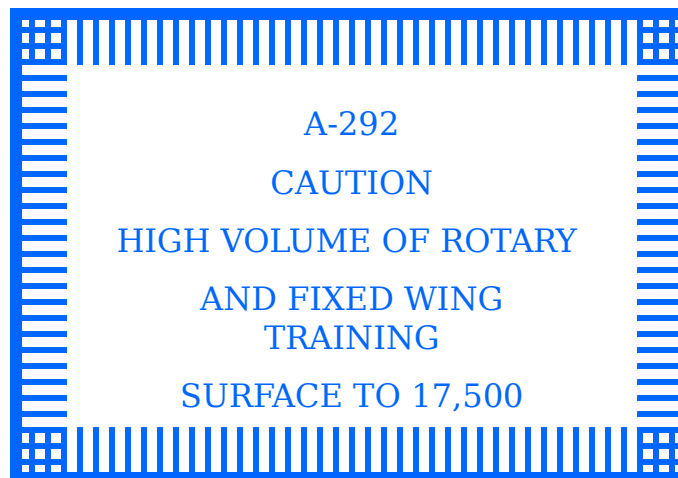
- Military Operating Area
 - **AIM:** “MOA’s consist of airspace of defined vertical and lateral limits established for the purpose of separating certain military training activities from IFR traffic.”
 - **AP/1A:** “A MOA is airspace established outside Class A airspace to separate... certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.”
 - **AIM:** “...Pilots should contact any FSS within 100 miles to obtain accurate real-time information concerning the MOA hours of operation...”
 - **AIM:** “Prior to entering an active MOA, pilots should contact the controlling agency for traffic advisories.”
 - **AIM:** “Pilots operating under VFR should exercise extreme caution while flying within a MOA when military activity is being conducted...”

MOA Depicted

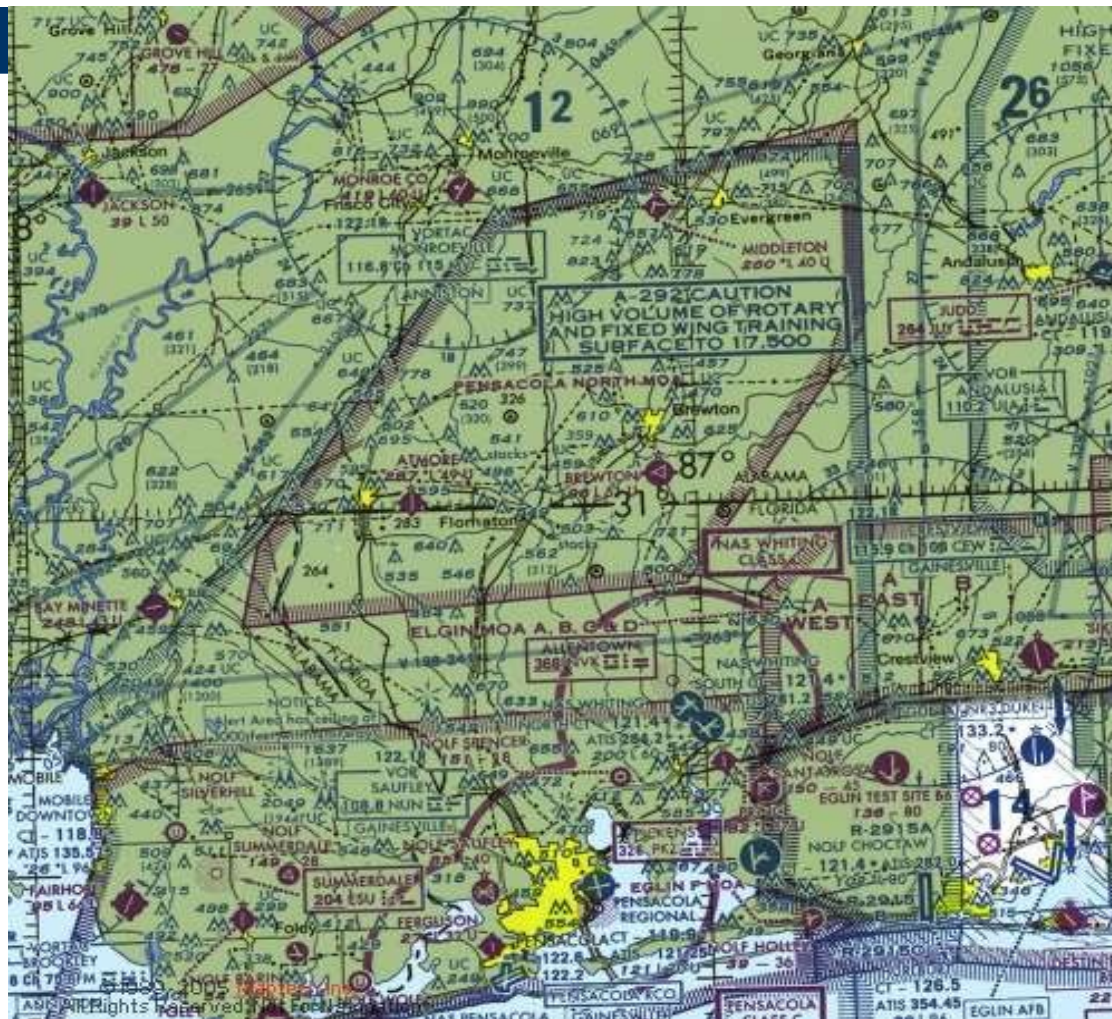


Special Use Airspace

- Alert Area
 - *“Alert areas are depicted on aeronautical charts to inform nonparticipating pilots of areas that may contain a high volume of pilot training or an unusual type of aerial activity.”*
 - *“...pilots of participating aircraft as well as pilots transiting the area shall be equally responsible for collision avoidance.”* – AIM and GP



Alert Area Depicted



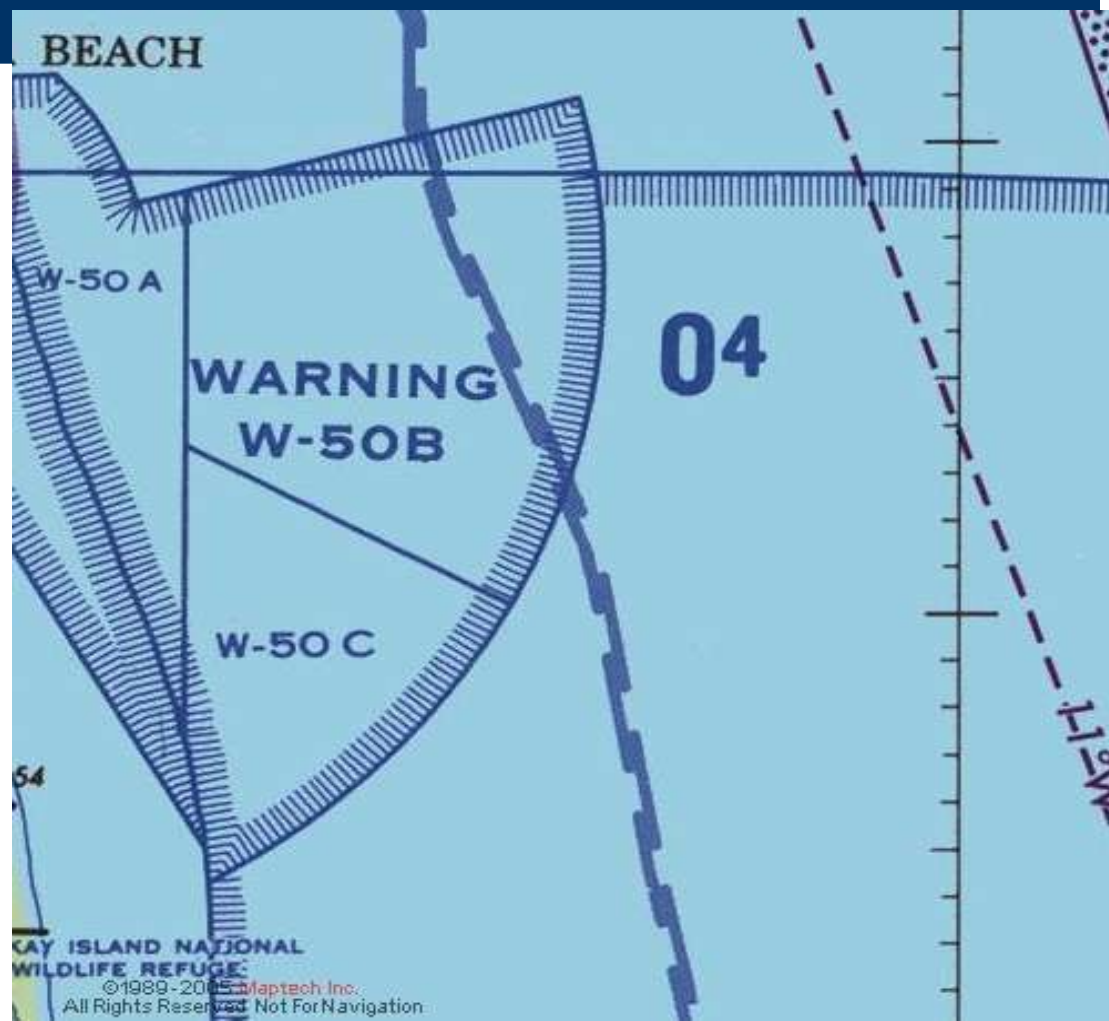
Special Use Airspace

- Warning Area

- *“A warning area is airspace of defined dimensions, extending from three nautical miles outward from the coast of the U. S., that contains activity that may be hazardous to nonparticipating aircraft... A warning area may be located over domestic or international waters or both.”*



Warning Area Depicted



Special Use Airspace

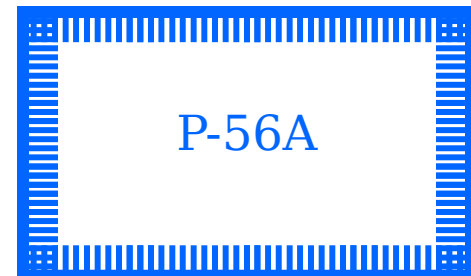
- Restricted Area

- *“Restricted areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restriction.”*
- *“Restricted areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles.”*
- *“Penetration of restricted areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants.”*

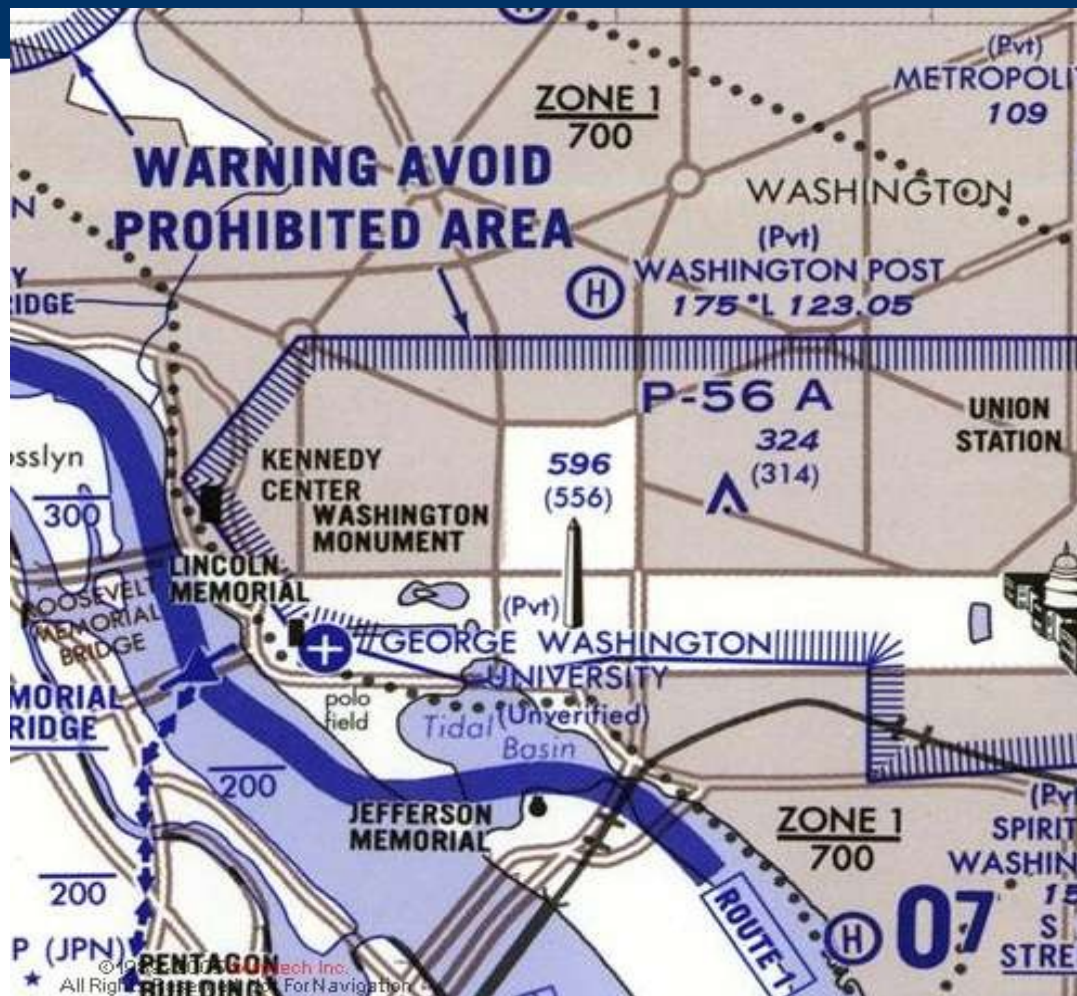


Special Use Airspace

- Prohibited Area
 - Prohibited areas contain airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft is prohibited.”
 - *“Such areas are established for security or other reasons associated with the national welfare.”*
- Controlling Agency
 - “NO A/G”
 - Entry must be coordinated before take-off.



Prohibited Area Depicted



Miscellaneous Airspace

- Land-based ADIZ (Washington DC Metropolitan ADIZ)
 - *“Land-based ADIZ are activated and de-activated over U. S. metropolitan areas as needed, with dimensions, activation dates and other relevant information disseminated via NOTAM.”*
 - *“In addition to requirements outlined in subparagraphs c1 through c3, pilots operating within a land-based ADIZ must report landing or leaving the land-based ADIZ if flying too low for radar coverage.”*
- Subparagraph C1
 - IFR or DVFR flight plan requirement if entering an ADIZ.
- Subparagraph C2
 - Two-way radio requirement
- Subparagraph C3
 - Transponder with Mode C required to be on and set to reply on assigned code.



Miscellaneous Airspace

- Controlled Firing Areas
 - Not charted, self-policing. Hazardous activity stops when participating elements detect a non-participating aircraft.
- Terminal Radar Service Area (TRSA)
 - Originally part of the Terminal Radar Program.
 - Never controlled airspace from regulatory standpoint because it was never subject to the rulemaking process.
 - Primary airport is Class D airspace. Remaining airspace is Class E as depicted.
 - **AIM:** *"Pilots operating under VFR are encouraged to contact the radar approach control and avail themselves of the TRSA Services. However, participation is voluntary on the part of the pilot."*

Miscellaneous Airspace

- National Security Areas
 - *“National Security Areas consist of airspace of defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities.”*
 - *“Pilots are requested to voluntarily avoid flying through the depicted NSA.”*

NOTICE

FOR REASONS OF NATIONAL
WELFARE, PILOTS ARE
REQUESTED
TO AVOID FLIGHT BELOW
2400' MSL IN THIS AREA

National Security Areas



Miscellaneous Airspace

- Wilderness Areas:
 - **AIM:** *"Pilots are requested to maintain a minimum altitude of 2,000 feet above the surface of the following: National Parks, Monuments, Seashores, Lakeshores, Recreation areas and Scenic River-ways... Wildlife Refuges, Big Game Refuges, Game Ranges, Wildlife Ranges, and Wilderness and Primitive areas. "* – AIM 7-4-6
 - **3710 (Ch 5.5):** *"[Noise Sensitive and Wilderness Areas] shall be avoided when at altitudes of less than 3,000 feet AGL except when in compliance with an approved:*
 - *Traffic or approach pattern*
 - *VR or IR route*
 - *Special use airspace."*



Wilderness Area



Conclusion

- Questions?